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1969 INVENTORY OF AIR POLLUTION MONITORING EQUIPMENT OPERATED BY STATE AND LOCAL AGENCIES

U. S. ENVIRONMENTAL PROTECTION AGENCY

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The Division of Air Quality and Emission Data of the Air Pollution Control Office of the Environmental Protection Agency has inventoried the air pollution monitoring equipment operated by state and local agencies in the 50 states, District of Columbia, and Puerto Rico. Reported by state, city and organization are the automatic sampler-analyzers, mechanized samplers, and static sample-collection devices enumerated in the survey for the period July 1, 1968, through June 30, 1969. Included are a sample survey questionnaire, a tabulation of equipment totals, and a glossary of abbreviations and terms.

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OF AIR POLLUTION MONITORING EQUIPMENT
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U.S. ENVIRONMENTAL PROTECTION AGENCY
Air Pollution Control Office
Research Triangle Park, North Carolina
March 1971

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ABSTRACT

The Division of Air Quality and Emission Data of the Air Pollution Control Office of the Environmental Protection Agency has inventoried the air pollution monitoring equipment operated by state and local agencies in the 50 states, District of Columbia, and Puerto Rico. Reported by state, city, and organization are the automatic sampler-analyzers, mechanized samplers, and static sample-collection devices enumerated in the survey for the period July 1, 1968, through June 30, 1969. Included are a sample survey questionnaire, a tabulation of equipment totals, and a glossary of abbreviations and terms.

Key words

Survey
Devices
Automatic sampler-analyzer
Mechanized sampler
Static sampler
Pollutant detector
State agency
Instruments
Monitoring equipment

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1969 INVENTORY
OF AIR POLLUTION MONITORING EQUIPMENT
OPERATED BY STATE AND LOCAL AGENCIES

Introduction

The Clean Air Act of 1967 requires the submission of a report to Congress each year on the development and expansion of air pollution monitoring systems. Each year, for purposes of that report, the Division of Air Quality and Emission Data has distributed a questionnaire to state and local agencies requesting a count of air pollution monitoring equipment. A copy of the 1969 questionnaire is shown in Figure 1.

The tabulations in this publication list equipment reported in operation in each agency as of June 1969. Two hundred ninety questionnaires were mailed out; approximately 75 percent were returned.

Table 1 compares the summarized data from 1968 and 1969 questionnaires. The first column shows the number of instruments operated by state and local agencies as of June 1968. The second column shows the number of instruments in operation in June 1969 and is a summary of the listings of individual agencies that comprise the remainder of this publication. (Several of the totals are greater than those appearing in the Secretary's Third Report to Congress, "Progress in the Prevention and Control of Air Pollution" because additional replies were received after that report was completed.)

Description of Listings

Each pair of facing pages contains the equipment numeration for the agencies listed. On the left-hand page are listed alphabetically, by state, city, and agency, the number of automatic sampler-analyzer devices. These devices are used to sample air continuously, may integrate their data either in the collector itself or electronically, and can produce numerical data directly in recorded and/or visual form.

On the right-hand page are listed, by state and city, mechanized sample collection devices, and static sample collection or pollutant detection devices. Mechanized equipment includes all powered collection devices that actively draw air through a filter or reagent to accumulate the sample; the static equipment includes those devices that depend upon the natural movement of air currents to bring the pollutant to the device.

Most equipment for each state agency is listed as a total for its entire network; no attempt has been made to identify the locations of that equipment. In several instances, however, the state agencies were asked to identify separately the equipment they operate in certain major cities. These are identified in parentheses following the agency name as, for example, "California Air Resources Board (at Sacramento)."

GLOSSARY OF ABBREVIATIONS AND TERMS

TERM	DEFINITION
Ald	Aldehydes
Bubbler	Sample collecting device that bubbles air through liquid reagents
Colorimeter	Measurement system that responds to color intensity of test solution
CO	Carbon monoxide
CO_2	Carbon dioxide
Coh	Coefficient Of Haze, a unit of measurement of soiling particulates; measured by light transmittance through a spot-tape sampler filter.
Conductimetric method	Measurement system that responds to changes in conductivity of a test solution
Coulometric method	Measurement system that responds to changes in electrolysis current
F. I. D.	Flame Ionization Detector, used in measuring hydrocarbons
HC	Hydrocarbons, family of compounds composed exclusively of hydrogen and carbon
Hi vol	High-volume air sampler for collection of suspended particulates
H_2S	Hydrogen sulfide
Infrared	Electromagnetic radiation in wavelength range of approximately 1 to 100 micrometers
NH_4^+	Ammonium ion
NO	Nitric oxide
NO_2	Nitrogen dioxide
OX	Oxidants, oxidizing compounds
Pb-Ac-Tape	Lead-acetate-treated tape used to detect H_2S
Particulates, settleable	Those particulates collected by sedimentation (dustfall)
Particulates, suspended	Those particulates collected by a Hi vol
RUDS	Reflectance Units, Dirt Shade, a unit of measurement of soiling particulates; measured by light reflectance from a spot-tape sampler filter
SO_2	Sulfur dioxide
Soiling	See Coh, RUDS
Spot-tape sampler	Sequential device for measuring soiled particulates (Coh, RUDS)
Sticky tape	Static collector for windblown particulates
Sulfation	Static reaction of sulfur dioxide in ambient air with lead peroxide coating either on cylinder (candle) or plate

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U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Consumer Protection and Environmental Health Service
National Air Pollution Control Administration
Division of Air Quality and Emission Data
5721 Dragon Way, Cincinnati, Ohio 45227

ANNUAL SURVEY OF AIR POLLUTION MONITORING
FOR THE PERIOD JULY 1, 1968 – JUNE 30, 1969

Card No. 0 0

Date:_____ Disregard this block ☐☐☐☐☐☐☐☐☐☐

Agency_____

Address_____

City_____ State_____ Zip_____

Telephone: Area_____ No.:_____ Ext.:_____

Person Completing Form:_____ Title_____

1 0 **PART I: STATIC SAMPLE COLLECTION EQUIPMENT** None: ☐

		No. of devices as of June 1969:			
	METHOD	ROUTINE	SPECIAL	TOTAL SAMPLES/YR	ROUTINE DEVICES ANTICIPATED BY JUNE 1970
GASES					
Sulfation Rate	Candle	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋
Sulfation Rate	Plate	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋
PARTICULATES					
Settleable	Dustfall jar	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋
Windblown	Sticky tape	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋

2 0 **PART II: MECHANIZED SAMPLE COLLECTION EQUIPMENT** None: ☐

		No. of devices as of June 1969:			
	METHOD	ROUTINE	SPECIAL	TOTAL SAMPLES/YR	ROUTINE DEVICES ANTICIPATED BY JUNE 1970
GASES					
Aldehydes	Bubbler	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋
Ammonia	Bubbler	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋
Nitrogen Dioxide	Bubbler	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋
Oxidants	Bubbler	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋
Sulfur Dioxide	Bubbler	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋
2 1 Hydrogen Sulfide	Pb-Ac-Tape	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋
_____	_____	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋
_____	_____	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋
2 3 **PARTICULATES**					
Suspended	Hi vol	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋
Respirable Dust	_____	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋
Soiling (Coh ,RUD)	Spot Tape	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋

Check Analyses Routinely Performed on hi-vol samples:

Ammonium	☐	Organics, Benzene extract	☐	Iron	☐
Nitrates	☐	Particle size distribution	☐	Nickel	☐
Sulfates	☐	Beta Radioactivity	☐	Cadmium	☐
Microscopic	☐	Metals	☐	Lead	☐

NAPCA FORM NO. HQ. 43 (8/69)

Figure 1a. Questionnaire used in fiscal year 1969 (front).

3 0 **PART III. AUTOMATIC SAMPLER-ANALYZER EQUIPMENT**

None: ☐ No of devices as of June, 1969:

	GASES	METHOD	ROUTINE	SPECIAL	Approximate Number of Instrument-Days Operated	ROUTINE DEVICES ANTICIPATED BY JUNE 1970
	Aldehydes	Colorimetric				
	Carbon Monoxide	Infra-red				
		Coulometric				
	Carbon Dioxide	Infra-red				
	Hydrocarbon, Total	F.I.D.				
3 1	Hydrogen Sulfide	Pb-Ac Tape				
	Nitric Oxide	Colorimetric				
	Nitrogen Dioxide	Colorimetric				
	Oxidants, Total	Colorimetric				
		Coulometric				
3 2	Sulfur Dioxide	Conductometric				
		Colorimetric				
		Coulometric				
	_____	_____				
3 4	PARTICULATES					
	Soiling (Coh, RUD)	Auto Tape				

4 0 **PART IV: METEOROLOGICAL MEASUREMENTS** None: ☐

List number of sites where routine measurements are taken for:

Temperature ☐ Wind Direction ☐ Relative Humidity ☐ Solar Radiation ☐

Wind Speed ☐ Precipitation ☐ Barometric Pressure ☐ Frequency of Measurement _____

5 0 **PART IV: MISCELLANEOUS MONITORING** None: ☐

List number of sites where routine monitoring is conducted for:

Odors ☐☐ Stack Sampling ☐☐

Eye Irritation ☐☐ Materials Effects ☐☐

Visibility ☐☐ Aeroallergens ☐☐

Respiratory discomfort ☐☐ Pesticides ☐☐

Other _____

6 0 **PART VI: ADDITIONAL FACILITIES**

Do you operate an inspection and licensing program? Yes ☐ No ☐

Are your data processed and summarized manually ☐ or by computer ☐ ?

If by computer, it is also used for other agency operations:

Licensing ☐ Emission Inventory ☐

Inspections ☐ Complaints ☐

Permits ☐

If you have stations equipped for telemetering, how many were in routine operation by June, 1969 ☐☐ how many are anticipated by June, 1970 ☐☐?

Figure 1b. Questionnaire used in fiscal year 1969 (back).

Table 1. TOTAL NUMBER OF AIR POLLUTION MONITORING DEVICES IN ROUTINE OPERATIONS BY STATE AND LOCAL AGENCIES

Type of device	Method	June 1968	June 1967
Static sample collection equipment			
Gases			
Sulfation rate	Candle and Plate	1764	2620
Particulates			
Settleable	Dustfall jar	2548	2632
Windblown	Sticky tape	....	215
Mechanized sample collection equipment			
Gases			
Aldehydes	Bubbler		125
Ammonia	Bubbler		76
Nitrogen dioxide	Bubbler	467	284
Oxidants	Bubbler		170
Sulfur dioxide	Bubbler		342
Hydrogen sulfide	Pb-Ac-Tape	....	58
Particulates			
Suspended	Hi Vol	1459	1759
Soiling (Coh, RUDS)	Spot tape	....	365
Automatic sampler-analyzer equipment			
Gases			
Aldehydes	Colorimetric	....	6
Carbon monoxide	Infrared	93	109
	Coulometric	....	
Carbon dioxide	Infrared		5
Hydrocarbons, Total	F. I. D.	63	66
Hydrogen sulfide	Pb-Ac-Tape	....	19
Nitric oxide	Colorimetric	45	59
Nitrogen dioxide	Colorimetric	48	76
Oxides, Total	Colorimetric	83	109
Sulfur dioxide	Conductimetric	151	215
	Colorimetric		
	Coulometric		
Particulates			
Soiling (Coh, RUDS)		....	274

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SURVEY DATA TABULATIONS

Table 2. AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Automatic sampler-analyzer equipment									
	Gases									Particulate sampling
	ALD	CO	CO_2	HC	H_2S	NO	NO_2	OX	SO_2	
ALABAMA										
Birmingham Jefferson County Department of Health		1					1	1		1
Mobile Mobile County Health Department										
Montgomery State Health Department										
ALASKA										
Anchorage Greater Anchorage Area Borough Health Dept.										
ARIZONA										
Phoenix Maricopa County Health Department		2		2			1	1	2	7
Phoenix Arizona State Department of Health		1		1		1	1	1	10	2
Tucson Pima County Air Pollution District										
CALIFORNIA										
Anaheim County of Orange Pollution Control District		2		1		3	3	3	3	2
Berkeley California Air Resources Board (At Sacramento)		1		1		1	1	1		1
Berkeley California Air Resources Board (At Sacramento)		2	1	2		2	2	2		4
Berkeley California Air Resources Board (Balance of State)		4		2		2	2	4		3
Eureka Humboldt County Air Pollution Control District										
Fresno County of Fresno, Division of Laboratories										
Los Angeles Los Angeles County Air Pollution Control District		10		4		10	10	10	10	9
Riverside Riverside County Air Pollution Control District		1					1	2	1	
Sacramento Sacramento County Health Department		1		1		1	1	2		
San Bernardino Air Pollution Control District		3		1		3	3	5	1	5
San Diego San Diego County Air Pollution District		1	1	1		2	2	6		2
San Francisco Bay Area Air Pollution Control District		8		8	2	8	8	11		8
Ventura Ventura County Air Pollution Control District		1				2	2	2		
COLORADO										
Boulder Boulder City County Health Department										
Colorado Springs City County Health Department										1
Denver Denver City and County Air Pollution Control		1		1		1	1	1	1	1
Denver Colorado Department of Health (At Denver)										1
Denver Colorado Department of Health (Balance of State)										10
Englewood Tri County District Health Department										
Grand Junction Mesa County Health Department										

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Mechanized sample-collection equipment								Static sample-collection equipment			
	Gases (bubbler)						Particulates		Sulfation rate		Particulates	
	ALD	NH_4	NO_2	OX	SO_2	H_2S	Hi vol	Spot tape	Candle	Plate	Dustfall	Sticky tape
ALABAMA												
Birmingham	10		10		10		10	6	7		7	
Mobile						1	6	1	8		24	9
Montgomery							6		7			
ALASKA												
Anchorage	4		4		4		4	3			20	
ARIZONA												
Phoenix							7			11		
Phoenix							10		10	200	10	10
Tucson				12	12		8		15		5	
CALIFORNIA												
Anaheim							1	2	10		20	
Berkeley							1		1		1	
Berkeley												
Berkeley							3		3		3	
Eureka	3		2	2	3		3				12	
Fresno												
Los Angeles							10		2	2	2	2
Riverside							1	2	1			
Sacramento								3				
San Bernardino								5				
San Diego	1	1	1	1	1		2	2	1		1	1
San Francisco					6	3	8	8				
Ventura			1	1			2		3			
COLORADO												
Boulder							2	2		4	4	
Colorado Springs							11	1			5	
Denver												
Denver							20		15		20	
Denver						2	23		11	11	20	3
Englewood							7	7		7	10	1
Grand Junction							3	1		5	5	

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Automatic sampler-analyzer equipment									
	Gases									Particulate soiling
	ALD	CO	CO_3	HC	H_2S	NO	NO_2	OX	SO_2	
Greeley Weld County Health Department										1
Jefferson City Jefferson County Health Department										4
Pueblo Pueblo City-County Health Department										
CONNECTICUT										
Bridgeport Bureau of Air Pollution Control										
Fairfield Health Department										
Greenwich Department of Health, Town Hall Annex										
Hartford Connecticut State Dept. of Health (Air Hartford)									1	2
Hartford Connecticut State Dept. of Health (Bal. of State)									3	6
Meriden Department of Health of Meriden										
Middletown Department of Health										
Milford Milford Health Department									1	
New Britain New Britain Health Department							1		1	3
New Haven New Haven Health Department						1	1	1	2	3
Norwalk Department of Health										
Stamford Stamford Department of Health									1	3
Stratford Department of Health		1					1	1	1	3
Waterbury Waterbury Health Department										1
DELAWARE										
Wilmington Water & Air Resources Comm.--Air Poll. Cont. Div.		4		4			4	4	13	10
DISTRICT OF COLUMBIA										
Washington Air Pollution Division		3		1				3	3	10
FLORIDA										
Bradenton Manatee County Health Department									1	
Jacksonville City of Jacksonville									3	
Miami Dade County Health Department								1	1	2
St. Petersburg Pinellas County Health Department										
Sarasota Sarasota County Health Department										
Tallahassee Florida Dept. Air and Water Pollution Control										
Tampa Department of Sanitary Sewers										
Tampa Hillsborough County Health Department		1					2		1	
W. Palm Beach Palm Beach County Health Department										
GEORGIA										
Atlanta Fulton County Health Department		1		1		1	1	1	1	1

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Mechanized sample-collection equipment								Static sample-collection equipment			
	Gases (bubbler)						Particulates		Sulfation rate		Particulates	
	ALD	NH_4	NO_2	OX	SO_2	H_2S	Hi vol	Spot tape	Candle	Plate	Dustfall	Sticky tape
Greeley							3	1		1	1	
Jefferson City							5	4		6	3	
Pueblo							10	2	10		3	
CONNECTICUT												
Bridgeport												
Fairfield												
Greenwich												
Hartford							3	2		1	1	
Hartford							20	7		30	30	
Meriden												
Middletown							2	1	1	1	2	
Milford							3	3		3	4	
New Britain			1		1		5	3	4	4	1	
New Haven	1	1	1	1	1	1	5			4	9	
Norwalk					1		2	2	4	4	1	
Stamford					2		3	3		15	12	
Stratford							3	3		4	1	
Waterbury	1	1	1	1	1		2			1	1	
DELAWARE												
Wilmington							14	10	17		17	14
DISTRICT OF COLUMBIA												
Washington	2	2	2	2	2		6	10		2	9	2
FLORIDA												
Bradenton					4		4				4	
Jacksonville												
Miami			2	2	2		9	2	15		10	
St. Petersburg							1					
Sarasota					3		2					
Tallahassee							11					
Tampa							1					
Tampa							18	3	23		23	1
W. Palm Beach							8				8	
GEORGIA												
Atlanta	1	1	2	1	2		5	3	6		10	

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Automatic sampler-analyzer equipment									
	Gases									Particulate soiling
	ALD	CO	CO_2	HC	H_2S	NO	NO_2	OX	SO_2	
Atlanta Georgia Department of Public Health										
Macon Macon Bibb County Health Dept. 9					1					
HAWAII										
Honolulu State Department of Health										1
IDAHO										
Boise Statehouse										
ILLINOIS										
Chicago City of Chicago Dept. Air Pollution Control						1	1	1	8	8
Chicago Cook County Air Pollution Control Bureau									4	
Evanston City of Evanston										
Joliet Will County Health Department										
Morton Grove Morton Grove Air Pollution Control Comm										
Rockford Rockford City Health Department										
Springfield Illinois Air Poll Control Brd (At E St Louis)					3				3	3
Springfield Illinois Air Poll Control Brd (At Chicago)										
Springfield Illinois Air Poll Control Brd (Balance of State)										
Waukegan Lake County Health Department									2	
Wheaton Dupage County Health Department										
INDIANA										
East Chicago Department of Air Quality Control									1	
Evansville Air Pollution Control Department		1							1	4
Ft. Wayne City Board of Public Health										
Gary Gary Air Pollution Control Division						1			3	
Hammond Air Pollution Control										1
Indianapolis Indianapolis Bureau of Air Pollution Control									2	1
Michigan City Air Pollution Control Division										
South Bend St. Joseph County Health Department										
Terre Haute Vigo County Health Department										1
IOWA										
Des Moines Des Moines-Polk County Health Department										
KANSAS										
Kansas City Kansas City Wyandotte County Health Dept.										

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Mechanized sample-collection equipment								Static sample-collection equipment			
	Gases (bubbler)						Particulates		Sulfation rate		Particulates	
	ALD	NH_4	NO_2	OX	SO_2	H_2S	Hi vol	Spot tape	Candle	Plate	Dustfall	Sticky tape
Atlanta	5		5	5	5		11		11			
Macon						1	4	1	5			
HAWAII												
Honolulu			1	1	1		1	1		1	1	1
IDAHO												
Boise							8			50	25	
ILLINOIS												
Chicago					20		20				20	
Chicago					7		15			4	4	4
Evanston												
Joliet							12		12			
Morton Grove							1					
Rockford												
Springfield												
Springfield							12		18		2	
Springfield							20		36		14	
Waukegan							4					
Wheaton							3		2			
INDIANA												
East Chicago			3		3		5		6		5	1
Evansville	1	1	1	1	2	1	4	4	1		4	1
Ft. Wayne												
Gary					3		7		6		6	
Hammond	2	2	3	2	3		3	1	4	3	3	1
Indianapolis	6	6	6	6	6	1	13	1	20		24	
Michigan City					3		3		3		3	
South Bend							4					
Terre Haute							12	1	3		5	
IOWA												
Des Moines							4	1		37	37	2
KANSAS												
Kansas City	1	1	1	1	1		5	1		7	7	

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Automatic sampler-analyzer equipment									
	Gases									Particulate soiling
	ALD	CO	CO_2	HC	H_2S	NO	NO_2	OX	SO_2	
Topeka Topeka Shawnee County Health Department										
Topeka Kansas State Department of Health										
Wichita Wichita-Sedgwick Co. Dept. of Community Health										
KENTUCKY										
Frankfort Kentucky Air Poll Control Comm (At Frankfort)										
Frankfort Kentucky Air Poll Control Comm (Balance of State)		2		2		2		2	9	
Louisville Air Pollution Control District of Jefferson City		1		1					5	8
LOUISIANA										
New Orleans Louisiana State Air Control Commission										
MAINE										
Augusta Environmental Improvement Commission										
MARYLAND										
Baltimore Maryland St. Dept. of Health (At Baltimore)										1
Baltimore Maryland St. Dept. of Health (Balance of State)									7	1
Cheverly Prince Georges County Health Department								2	2	2
Pasadena Anne Arundel County Health Department		3		3					3	3
Rockville Montgomery County Health Department										
Towson Baltimore County Department of Health		3		3					3	3
MASSACHUSETTS										
Boston Mass. Dept. of Public Health, DEH, MAPCD			1					1		
Fitchburg Fitchburg Board of Health										
Springfield Lower Pioneer Valley APCD								1	1	
Worcester Worcester Air Pollution Control Division									1	
MICHIGAN										
Detroit Wayne County Health Air Pollution Control Div		1		1					9	
Flint City of Flint										2
Grand Rapids City of Grand Rapids										
Kalamazoo Kalamazoo County Health Department										
Lansing Michigan Department of Public Health		1						1	4	
Muskegon Muskegon County Health Department									1	
MINNESOTA										
Duluth St. Louis County Health Department										1

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Mechanized sample-collection equipment								Static sample-collection equipment			
	Gases (bubbler)						Particulates		Sulfation rate		Particulates	
	ALD	NH_4	NO_2	OX	SO_2	H_2S	Hi vol	Spot tape	Candle	Plate	Dustfall	Sticky tape
Topeka							2		3		3	
Topeka												
Wichita							1					
KENTUCKY												
Frankfort							1		1		1	1
Frankfort		10	10	10	18	10	60	10	30	24	50	50
Louisville							11	8			11	
LOUISIANA												
New Orleans	2	2	2		2		14	1	12	3	22	
MAINE												
Augusta												
MARYLAND												
Baltimore							1		1		1	
Baltimore							18		15		17	
Cheverly			1		2		13	2		13	14	1
Pasadena	3		3	3			6	3			3	
Rockville				1	1		4	3			12	
Towson	3		3	3			12	3			3	
MASSACHUSETTS												
Boston			1	1	3		3	3	47		47	
Fitchburg					1		2	2	2		2	
Springfield					3		3	3	12			
Worcester					2		4	3	14		14	
MICHIGAN												
Detroit	1	1	1	1	1		11	10		16	45	2
Flint	1	1	1	1	1		6	2	6		6	
Grand Rapids	1	1	1	1	1		9		9		9	
Kalamazoo							1		1			
Lansing							11		13			
Muskegon							3	1	20	1	20	
MINNESOTA												
Duluth							6	1	6		18	

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Automatic sampler-analyzer equipment									
	Gases									Particulate soiling
	ALD	CO	CO_2	HC	H_2S	NO	NO_2	OX	SO_2	
Minneapolis Minneapolis Air Pollution Control Department		1		1			1	1	2	1
Minneapolis Minnesota Pollution Control Agency		1		1					1	7
St. Paul City of St. Paul Air Pollution Control									1	3
MISSISSIPPI										
Jackson Mississippi Air & Water Pollution Control Comm										
MISSOURI										
Independence Independence Health Department										
Jefferson City Missouri Air Conservation Comm (At Kansas City)										
Jefferson City Missouri Air Conservation Comm (At St. Louis)										
Jefferson City Missouri Air Conservation Comm (Bal. of State)										
Kansas City Air Pollution Control									1	
St. Louis Division of Air Pollution Control		1						1	2	2
Springfield Greene County City of Springfield Air Pollution										
MONTANA										
Helena Montana State Department of Health									2	
NEBRASKA										
Lincoln Lincoln Lancaster County Air Pollution Control										1
Lincoln Nebraska State Air Pollution Control Council										
Omaha Omaha Douglas County Health Department										
NEVADA										
Las Vegas Clark Co. District Health Department							1	1	1	
Reno City County Dist. Health Department										
Reno Nevada Division of Health										
NEW HAMPSHIRE										
Concord New Hampshire Air Pollution Control Agency					5					1
NEW JERSEY										
Elizabeth City of Elizabeth Department of Health										
Jersey City Board Of Health Laboratory										
Patterson Department of Health										
Perth Amboy Perth Amboy Air Pollution Bureau										
Trenton Clean Air & Water, Air Poll Cont. (At Camden)	1	2	1	1		1	1	1	2	1
Trenton Clean Air & Water, Air Poll Cont. (At Newark, etc.)	2	5	1	2		2	2	2	5	5

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Mechanized sample-collection equipment								Static sample-collection equipment			
	Gases (bubbler)						Particulates		Sulfation rate		Particulates	
	ALD	NH_4	NO_2	OX	SO_2	H_2S	Hi vol	Spot tape	Candle	Plate	Dustfall	Sticky tape
Minneapolis							1	1		26	26	
Minneapolis							12	6	20	140	80	20
St. Paul							11	3	15	15	17	
MISSISSIPPI												
Jackson							96			96	96	
MISSOURI												
Independence							3			5	5	
Jefferson City							7		3	2	9	
Jefferson City									13		13	
Jefferson City							17		20			
Kansas City					3		13	3		42	21	
St. Louis							7	4	59		59	
Springfield							17	1	4	4	4	
MONTANA												
Helena							9		15	15	18	
NEBRASKA												
Lincoln												
Lincoln												
Omaha												
NEVADA												
Las Vegas			1	1			13	1			14	
Reno			2	2	2		6	3	3		3	
Reno												
NEW HAMPSHIRE												
Concord						4	5	1	36		36	
NEW JERSEY												
Elizabeth							1				1	1
Jersey City	1	1	1	1	1		2					
Patterson	1	1	1	1	1		2		1	1		
Perth Amboy										1	1	1
Trenton												
Trenton												

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Automatic sampler-analyzer equipment									
	Gases									Particulate soiling
	ALD	CO	CO_2	HC	H_2S	NO	NO_2	OX	SO_2	
Trenton Clean Air & Water, Air Poll Cont. Bur. of State										
West Orange Suburban Air Pollution Commission									1	1
NEW MEXICO										
Albuquerque Albuquerque Environmental Health Department		1						1		
NEW YORK										
Albany N. Y. State Dept. of Health (At Albany)		1		1		1	1	1	1	1
Albany N. Y. State Dept. of Health (At Buffalo and Niagara Falls)		2		2		2	2	2	2	2
Albany N. Y. State Dept. of Health (At Rochester)										
Albany N. Y. State Dept. of Health (At Syracuse and Onondaga County)		1		1		1	1	1	1	1
Albany N. Y. State Dept. of Health (Balance of State)		1		1		1	1	1	1	1
Binghamton Broome County Health Department										
Buffalo Erie County Air Pollution Control		1		1	1		1		2	3
Hudson Columbia County Health Department										
Mineola Bureau of Air Pollution Control		1							1	2
New York City Interstate Sanitation Commission		1							1	2
New York City New York City Dept. of Air Resources		11							11	10
Niagara Falls Niagara County Health Department										
Poughkeepsie Dutchess County Department of Health					1					1
Smithtown Suffolk County Department of Health										
Syracuse Onondaga County Health Department		1		1		1	1		1	6
Troy Rensselaer County Department of Health										
Watertown Watertown Fire Department										
W. Haverstraw Rockland County Department of Health										
White Plains Westchester County Department of Health										1
Yonkers Yonkers Department of Health										
NORTH CAROLINA										
Asheville Regional Air Pollution Commission									1	
Charlotte Mecklenburg Co. Health Dept.--Air Poll. Section										
Durham Durham County Air Pollution Control Unit									1	2
Gastonia Gaston Co. Air Pollution Control Section										
Greensboro Guilford County Health Department										4

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Mechanized sample-collection equipment								Static sample-collection equipment			
	Gases (bubbler)						Particulates		Sulfation rate		Particulates	
	$A\ell_2O$	NH_3	NO_2	OX	SO_2	H_2S	Hi vol	Spot tape	Candle	Plate	Dustfall	Sticky tape
Trenton												
West Orange							5	1	12			
NEW MEXICO												
Albuquerque	1	1	1	1	1		10	3		5		2
NEW YORK												
Albany			2		2		2		3		4	1
Albany							4		2		2	2
Albany												
Albany							1		1		1	1
Albany							14		6		15	1
Binghamton							6		13		14	1
Buffalo	1	1	1	1	1		12		12		12	
Hudson							2		2		2	
Mineola							15		15		15	
New York City					1			2				
New York City	1		2	1	38		38	31	38		39	
Niagara Falls					1		12		18		18	
Poughkeepsie							2		2		2	
Smithtown							6		6		6	
Syracuse	1	1	1	1	1		10	5	13		13	
Troy							4		4		4	
Watertown												
W. Haverstraw							1		2		2	
White Plains		4	4	4	4		10		5		11	
Yonkers							1		1		1	
NORTH CAROLINA												
Asheville			4	4	5	3	14	7			42	
Charlotte			8		8		14	10			36	
Durham			3	3	3	1	3	2			20	
Gastonia			40		9	1	9	9			40	
Greensboro	1	1	10	1	10		14	5		4	9	

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Automatic sampler-analyzer equipment									
	Gases									Particulate soiling
	ALD	CO	CO_2	HC	H_2S	NO	NO_2	OX	SO_2	
Hickory Catawba-Lincoln Air Pollution Control Unit										
Raleigh Dept. of Water & Air Resources, Air Poll Cont Div							1			6
Winston-Salem Forsyth Co. Air Pollution Control								1		12
NORTH DAKOTA										
Bismark North Dakota State Dept. of Health										
OHIO										
Akron Akron-Barberton Air Pollution Control Agency		1		1			1		1	5
Canton Canton City Health Department									1	
Cincinnati Div of Air Poll Control City of Cincinnati										
Cleveland Div of Air Poll Control, City of Cleveland	1	1		1		1	1	1	1	1
Columbus Air Pollution Control City of Columbus										
Columbus Ohio Dept. of Health Air Poll Unit (At Cincinnati)										
Columbus Ohio Dept. of Health Air Poll Unit (At Cleveland)										
Columbus Ohio Dept. of Health Air Poll Unit (At Columbus)										
Columbus Ohio Dept. of Health Air Poll Unit (At Dayton)										
Columbus Ohio Dept. of Health Air Poll Unit (At Gibsonburg)										
Columbus Ohio Dept. of Health Air Poll Unit (At Porterfield)										
Columbus Ohio Dept. of Health Air Poll Unit (At Steubenville)										
Columbus Ohio Dept. of Health Air Poll Unit (At Toledo)										
Columbus Ohio Dept. of Health Air Poll Unit (At Youngstown)										
Dayton Montgomery County Health Department								1		
Irontown Irontown Air Pollution Control Agency										2
Lorain Air Pollution Control Department	1	1			1				2	2
Portsmouth Portsmouth City Health Dept. Air Poll. Control										
Steubenville Air Pollution Department										2
Toledo Pollution Control Agency									4	
Warren Trumbull County Health Department										
Youngstown Youngstown Air Pollution Control										
OKLAHOMA										
Oklahoma City Oklahoma City-County Health Department										
Oklahoma City Oklahoma State Dept. of Health (At Okla. City)										

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Mechanized sample-collection equipment								Static sample-collection equipment			
	Gases (bubbler)						Particulates		Sulfation rate		Particulates	
	ALD	NH_4	NO_2	OX	SO_2	H_2S	Hi vol	Spot tape	Candle	Plate	Dustfall	Sticky tape
Hickory												
Raleigh	41		41	41	41	6	48	6			48	
Winston-Salem			12		12		14				12	
NORTH DAKOTA												
Bismark							3					
OHIO												
Akron							7		19		19	
Canton	5	5	5	5	5		10	5	13		13	
Cincinnati							2	3			10	3
Cleveland			12		12		22				34	
Columbus								1	6		23	
Columbus							13		24		24	
Columbus							3					
Columbus												
Columbus												
Columbus							2				6	6
Columbus							2		2		2	
Columbus												
Columbus												
Columbus												
Dayton			1		1		6	2	35	9	36	
Irontown						2	4	2				
Lorain	1	1	1	1	1		3	2	3		9	
Portsmouth									3		9	
Steubenville							11	2	29	3	29	5
Toledo							12	1	8		35	
Warren												
Youngstown	1	1	1	1	1		1			1	1	1
OKLAHOMA												
Oklahoma City	1	1	1	1	1		7	4	2		7	
Oklahoma City							8		2		6	1

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Automatic sampler-analyzer equipment									
	Gases									Particulate soiling
	ALD	CO	CO_2	HC	H_2S	NO	NO_2	OX	SO_2	
Oklahoma City Oklahoma State Dept. of Health (Bal. of State)										
Tulsa Tulsa City-County Health Department										
OREGON										
Eugene Lane Regional Air Pollution Authority										
Portland Columbia-Willamette Air Pollution Authority									1	1
Portland Dept. of Environmental Quality-Air Quality Cont.		2		1		1	1	1	3	10
Salem Mid Willamette Valley Air Pollution Authority										1
PENNSYLVANIA										
Allentown Bi-City Health Unit–Allentown-Bethleham										
Erie Erie County Department of Health										
Harrisburg Penn. Dept. of Health–BAPC (At Philadelphia)		1								2
Harrisburg Penn. Dept. of Health–BAPC (At Pittsburgh)										
Harrisburg Penn. Dept. of Health–BAPC (Balance of State)										
Northampton Lehigh Valley Air Pollution Control District										
Philadelphia Air Management Services Laboratory		4		4		3	3	4	6	
Pittsburgh Allegheny Co. Bureau of Air Pollution Control		1		1	1				2	1
Reading City of Reading										
PUERTO RICO										
San Juan Puerto Rico Health Department										
RHODE ISLAND										
Providence Rhode Island Division of Air Pollution Control										
SOUTH CAROLINA										
Charleston Air Pollution Control-Charleston Co. Health Dept.				1			1		4	
Columbia S. C. Pollution Control Authority, Div of Air Poll										
Spartanburg City of Spartanburg, Inspection Department										
SOUTH DAKOTA										
Pierre South Dakota Department of Health										
TENNESSEE										
Chattancoga City of Chattanooga Air Poll. Control Bureau										1
Knoxville Knox Co. Department of Air Pollution Control										1
Nashville Air Poll Control Div-Metropolitan Health Dept.										
Nashville Div of Air Pollution Control, Tenn. Dept. of Health										

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Mechanized sample-collection equipment								Static sample-collection equipment			
	Gases (bubbler)						Particulates		Sulfation rate		Particulates	
	ALD	NH_4	NO_2	OX	SO_2	H_2S	Hi vol	Spot tape	Candle	Plate	Dustfall	Sticky tape
Oklahoma City							17		12		44	
Tulsa				2	2		8	1		16	16	6
OREGON												
Eugene									6		32	6
Portland			1				13	1			13	
Portland			5	5	5	6	75	10	7		40	
Salem							6	1	8		9	
PENNSYLVANIA												
Allentown	1	1	1	1	1		2		2			
Erie							1					
Harrisburg												
Harrisburg												
Harrisburg							21		42		42	
Northampton											8	
Philadelphia							4	6	44		44	
Pittsburgh	1		1		1	3	7	14	37		40	
Reading	1	1	1	1	1		1					
PUERTO RICO												
San Juan							1		9			
RHODE ISLAND												
Providence		8	8	8	8		11		10		10	
SOUTH CAROLINA												
Charleston			2		2		8		5		2	
Columbia							20		20		20	
Spartanburg							1	1	6		1	
SOUTH DAKOTA												
Pierre												
TENNESSEE												
Chattanooga							4	1			10	
Knoxville							6		6	6	8	
Nashville							9	2	9		9	
Nashville							9	9	9	9		

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Automatic sampler-analyzer equipment									
	Gases									Particulate soiling
	ALD	CO	CO_2	HC	H_2S	NO	NO_2	OX	SO_2	
TEXAS										
Austin Texas State Dept. of Health (At Dallas-Ft. Worth)									6	2
Austin Texas State Dept. of Health (At Houston-Galveston)										
Austin Texas State Dept. of Health (At San Antonio)										
Austin Texas State Dept. of Health (Balance of State)										
Dallas City of Dallas Health Dept., Air Poll Control Sect.										
Fort Worth Department of Public Health				1						
Houston City of Houston Health Dept. Air Poll Control Pgm	1						1	1	1	5
La Marque Galveston County–Mainland Cities Health Dept.				1	2			1	1	
Laredo Laredo-Webb County Health Department										
Lubbock City-County Health Department					2					2
San Antonio San Antonio Metropolitan Health District										
UTAH										
Salt Lake City Utan State Division of Health							1	3	3	
VERMONT										
Barre Industrial Hygiene Division										
VIRGINIA										
Alexandria Alexandria Health Department								1	1	1
Arlington Arlington Co. Environmental Health Bureau										
Danville City of Danville–Engineering & Planning Dept.										
Fairfax Fairfax County Health Department								1	1	
Hampton Hampton Health Department										
Richmond Department of Public Safety–Bureau of Air Poll										
Richmond Central Virginia Air Pollution Control District										
Richmond State Air Pollution Control Board										
Roanoke City of Roanoke										
WASHINGTON										
Mt. Vernon Northwest Air Pollution Authority									1	2
Olympia Olympia Air Pollution Control Authority										
Seattle Puget Sound Air Pollution Control Agency								2	1	
Seattle Washington St. Office of A.Q.C. (At Seattle-Tacoma)[2]							1	4	1	3
Seattle Washington St. Office of A.Q.C. (Balance of State)[2]							1	4	1	3

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Mechanized sample-collection equipment								Static sample-collection equipment			
	Gases (bubbler)						Particulates		Sulfation rate		Particulates	
	ALD	NH_4	NO_2	OX	SO_2	H_2S	Hi vol	Spot tape	Candle	Plate	Dustfall	Sticky tape
TEXAS												
Austin										2	2	2
Austin							4			6	6	6
Austin												
Austin							30		3	17	17	17
Dallas							13	5			8	8
Fort Worth							15		5		6	2
Houston	10	10	10	10	10	5	36	5	34		34	
La Marque	6	6	6	6	6	2	14		2	2	2	2
Laredo							8		1	1	1	1
Lubbock							17		4	4	4	4
San Antonio							18			18	18	6
UTAH												
Salt Lake City							5		18		18	
VERMONT												
Barre										7	7	
VIRGINIA												
Alexandria				1				1	4	1	5	1
Arlington			1	1	1		1				4	
Danville							1					
Fairfax			1	1	1		6		21		21	
Hampton							1					
Richmond												
Richmond							1			4	18	
Richmond							2		44		90	
Roanoke			2	2	2	2		2				
WASHINGTON												
Mt. Vernon							3	2	6		5	
Olympia												
Seattle							17		14		24	
Seattle							2	2	7		5	
Seattle							11	2	11		27	1

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Automatic sampler-analyzer equipment									
	Gases									Particulate soiling
	ALD	CO	CO_2	HC	H_2S	NO	NO_2	OX	SO_2	
Spokane Spokane County Air Pollution Control Authority										
Vancouver Southwest Air Pollution Control Authority										
Yakima Yakima County Clean Air Authority										2
WISCONSIN										
Eau Claire Eau Claire City-County Health Department		1				1			1	
Madison Madison Department of Public Health										
Madison Dept. of Nat Res. Sect of A.P.C. (At Milwaukee)										
Madison Dept. of Nat. Res. Sect of A.P.C. (Balance of State)										
Milwaukee Milwaukee County Dept. of Air Pollution Control		1		1			1	1	1	1
WYOMING										
Cheyenne Wyo. Dept. of Health & Social Services									1	3

Table 2 (continued). AIR POLLUTION MONITORING EQUIPMENT BY AGENCY

	Mechanized sample-collection equipment								Static sample-collection equipment			
	Gases (bubbler)						Particulates		Sulfation rate		Particulates	
	ALD	NH_4	NO_2	OX	SO_2	H_2S	Hi vol	Spot tape	Candle	Plate	Dustfall	Sticky tape
Spokane												
Vancouver							3	2				
Yakima							2	2			4	
WISCONSIN												
Eau Claire							2					
Madison					1						22	
Madison												
Madison					1		2				2	
Milwaukee			1	1	1		6	1	2		44	
WYOMING												
Cheyenne	1	1	1	1	1	3	10	3	16	200	16	